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INCIDENCE OF IMMEDIATE IMPLANT PLACEMENT IN PRIVATE DENTAL COLLEGE

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ABSTRACT

Introduction :

Tooth failure generally results in a lack of bone volume in the vertical and horizontal direction. In attempts to reduce this alveolar bone resorption in order to preserve periodontal construction, implant placement is advised immediately after tooth extraction.

Materials and method :

A retrospective analysis was performed for patients attending a private hospital in Chennai, India. The aim of the study is to study the prevalence of immediate implant placement in private dental institutions. Patients who have undergone immediate implant placement from June 2019 to March 2021 were included in the study. Total sample size was 25 patients. The data was then entered into Microsoft Excel and tabulated. Following which data was imported into the SPSS software by IBM. Data analysis was performed in the statistical software SPSS and data were analyzed by descriptive analysis and chi-square correlation.

Results :

After statistical analysis, it is found that 13% were males and 12% were females, 9% of the immediate

implant placement was in first quadrant, 15% in second quadrant and 1% in fourth quadrant. There was no incidence of immediate implant placement in the third quadrant.

Conclusion :
It is observed that the prevalence of immediate implant was more in males and was most common in the second quadrant.

Key words :
Immediate implant; extraction; dry socket; infectious site; osseous membrane

INTRODUCTION :

Dental implants help in restoring function and esthetics, avoiding preparation of abutments adjacent to missing teeth, long-term prognosis, and patient satisfaction. The primary objective of implant therapy is an esthetic outcome, with high predictability and a low risks of complication (1). Secondary objectives include minimal surgical interventions like open-flap procedures, least possible pain and mobility, short treatment time, and cost effectiveness. The efficacy of immediate implant placement has been shown to be predictable. The literature (2) demonstrates high success rates with extraction and immediate implant placement and also provisionalization in the esthetic zone. Immediate implant placement may be the treatment of choice for a tooth with endodontic failure, internal or external root resorption, extensive caries or root fracture . The International Team for Implantology Consensus Conference 2013 clearly states that implants should be placed in the early time frame following tooth extraction, using either an immediate or early implant placement approach (3). Late implant placement should only be used if there are patient- and site-specific reasons, and may lead to pain, swelling, bleeding, hematoma, infection, soft tissue dehiscence, multiple surgical interventions and longer treatment. Advances in dental implant treatment will contribute to stable success levels for dental implants. Within the anterior maxillary region, this becomes more important because of the prominence of the region, because if there is a strong lip line, the smile line becomes more prominent, thereby raising the need for the aesthetic outcome, with some writers rating function and elegance in the anterior maxillary area of equal significance (4). Anterior teeth are those specifically picked to enhance beauty. Selection needs both the empirical experience and the technical ability of the dentist . Maintaining proper oral health will avoid gingivitis. The interdental papilla fully covers the gap between the teeth or replacements and can be accomplished by making the interproximal bone crest within 5 mm of the desired point of contact of the final reconstruction (5).When the implant is correctly positioned in a suitable 3- dimensional position, an optimal emergence profile is achieved. The placement of an implant at the centre of the edentulous space mesiodistally is utmost important and a minimum of 1.5 mm of space between the implant and the neighbouring natural tooth or, whether this gap is violated, an interdental papilla failure is anticipated (6). Evaluation of the location in the labial-palatal direction is also critical, as placing too far labially can contribute to the over-contouring of the crown, which cannot be fixed prosthetically. To optimal implant attractiveness, the implant will be positioned 1.5mm to 3.0mm below the CEJ . Extraction of a tooth implies a loss of a traditional strategy that may lead to reconstructive operation, i.e. immediate implant insertion with immediate packing. This instant loading treatment alternative compensates for the adverse psychological impact of extraction. Immediate activation has two main benefits (7). The first is the biological impact of the osseointegration of the implant, given the restrictions faced in the healing period. The second is the imperative influence that is rational and comprises the development of the surgical and prosthetic stage in the shortest period

practicable. Some of the most attractive aspects of immediate implant placement and provisionalization are its effectiveness in maximizing esthetic performance while maintaining the current bone and gingival architecture (8). Potential benefits of immediate implants/loading have been recognized, in that the alveolar bone is retained to a degree during detachment so that the individual is not impaired aesthetically so clinically throughout the healing process. Fewer medical operations are required, with diagnosis usually performed within a shorter timeline.

Our team has extensive knowledge and research experience that has translate into high quality publications(9),(10),(11),(12),(13–22) (23),(24–26),(27,28)

The aim of this study is to assess the placement of immediate implant in a private institution.

MATERIALS AND METHOD :

The retrospective study was conducted in a private hospital, Chennai. All patients undergoing immediate implant placement were included in the study and the etiology of extraction was recorded. The retrospective evaluation was conducted by analyzing the data of 86000 patients reported in the outpatient department of a private hospital, Chennai, between June 2019 and March 2021. The collected data were cross-verified by intraoral photographs and radiographs of the respective case sheets. To minimize sampling bias, the inclusion of all available Data with the exclusion of incomplete data was done. The internal and external validity of data is present. The data was entered in a methodical manner [serial number, name, age, gender, tooth number]. The data were entered into Microsoft Excel and tabulated. Following which data was imported into the SPSS software by IBM. Data analysis was performed in the statistical software SPSS and data were analyzed by descriptive analysis and chi-square correlation.

RESULTS AND DISCUSSION :

Figure 1 : bar chart showing frequency of gender

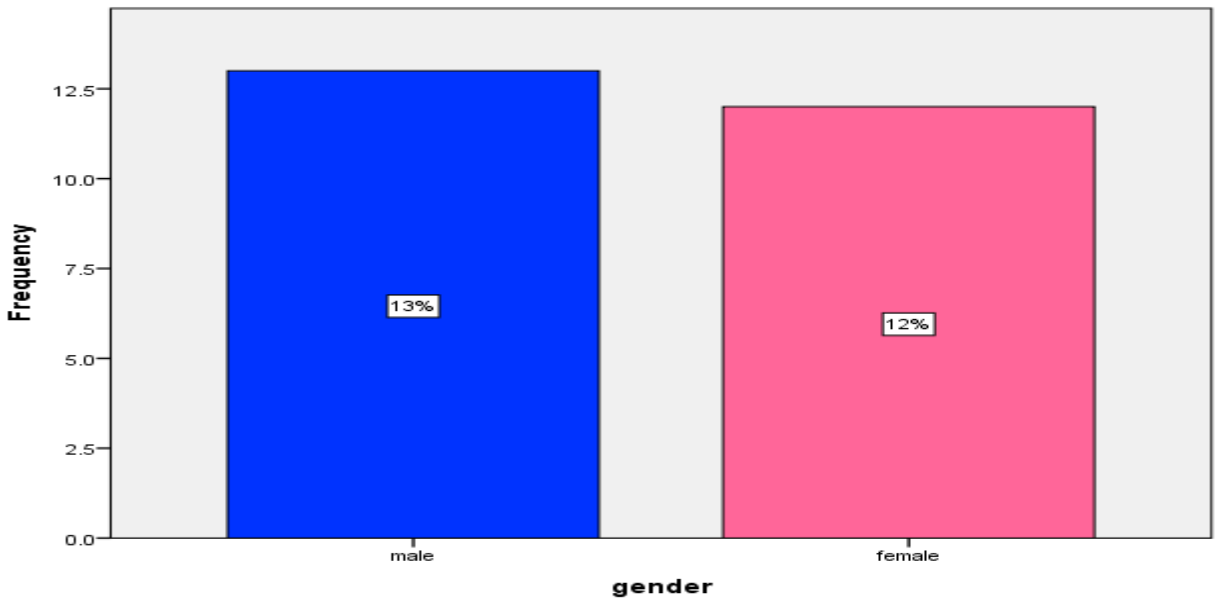


Figure 2 : bar chart showing frequency of site of immediate implant placement

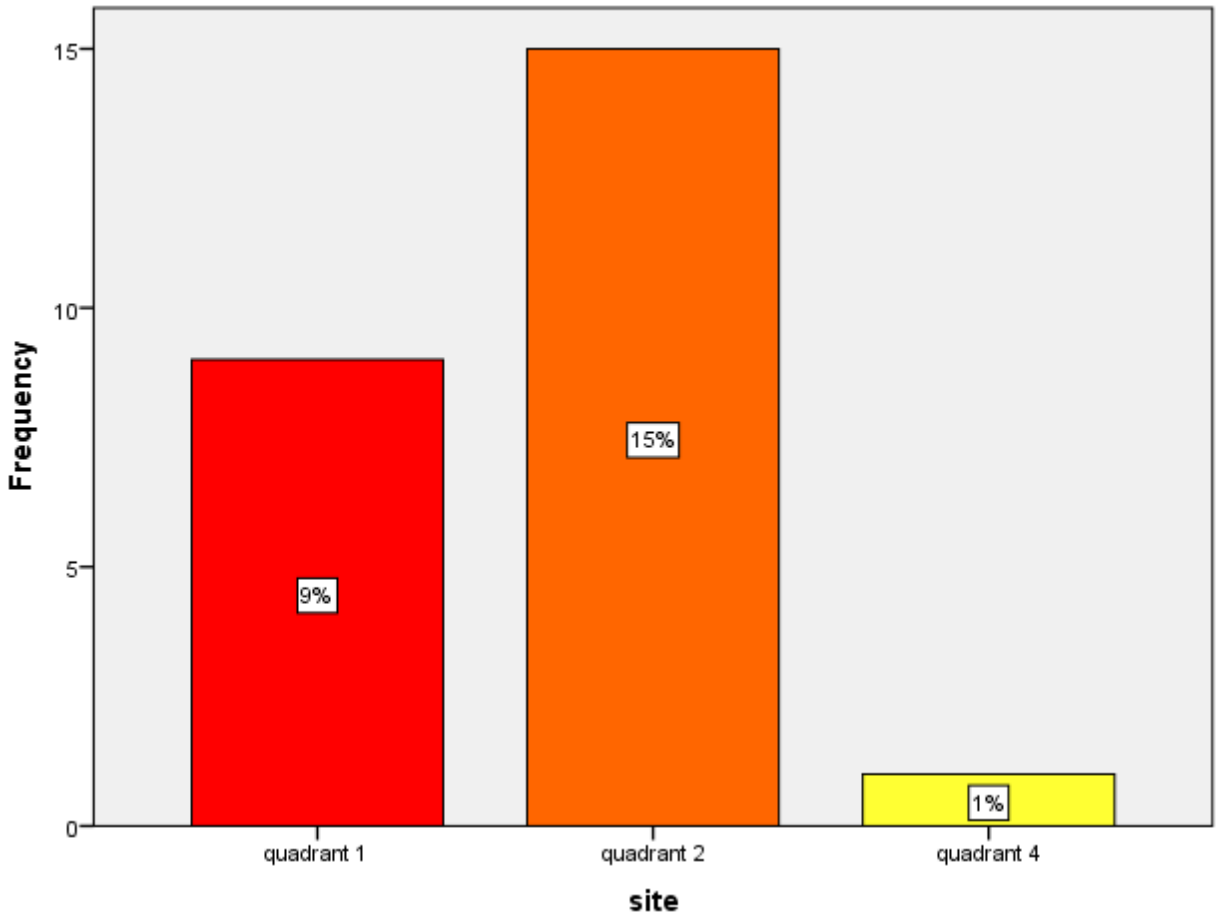
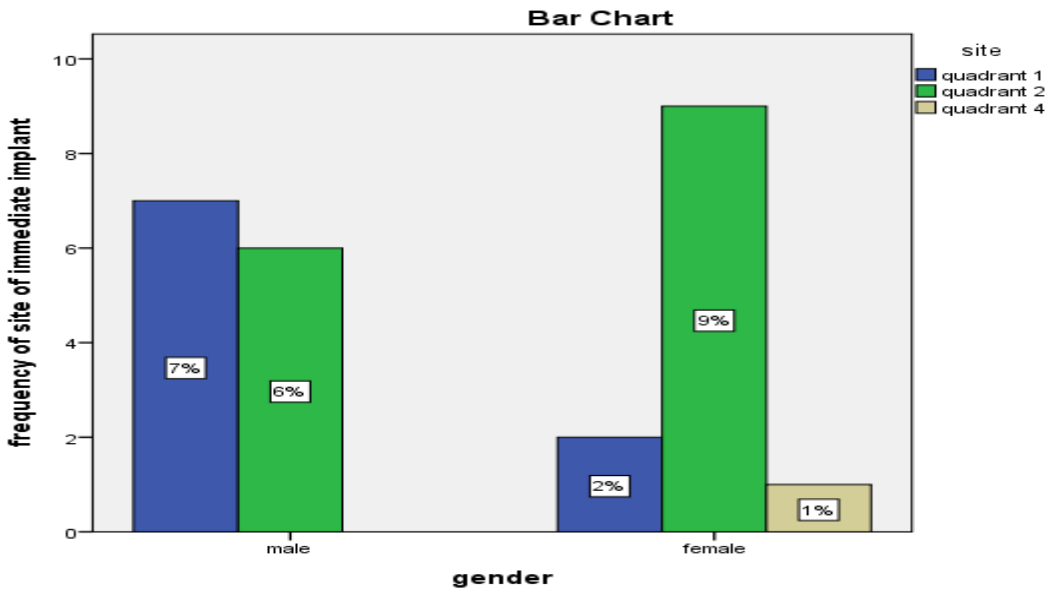


Figure 3 : bar chart showing correlation between gender and implant site



Within the limits of the study, a total of 25 immediate implants were placed in 3 different quadrants. Among the 25 immediate implants placed, 13% were males and 12% were females. The site of the teeth was grouped into quadrants and among them, 9% were placed in first quadrant, 15% in second quadrant and 1% in fourth quadrant. No immediate implants were placed in the third quadrant as from the data retrieved. On correlation between the gender and quadrants, it is observed that 7% of immediate implant was placed in first quadrant and 6% in the second quadrant in males alone. 2% of immediate implant was placed in first quadrant, 9% in the second quadrant and 1% in the fourth quadrant in females alone.

The association between site and gender distribution of the teeth of patients who have undergone immediate implant placement was done using Chi Square tests (p-value = 0.008 - significant). Hence there was a significant association between site and gender wise distribution of the teeth of patients who have undergone immediate implant placement. Morton first showed effectiveness with the rapid insertion and provisionalization of single anterior maxillary implants; several trials have proven the feasibility of such procedures (29). Upon extraction, gauze saturated with Aloe vera when put in the socket and asked by the patient to bite on it shows increased healing and blood clot forming. The performance rate for maxilla was 66- 95.5 per cent (30). Atraumatic extraction is the secret to the effective installation of a single visit implant in the esthetic region. The cosmetic result is primarily decided by the safe and secure peri-implant tissues as well as the constructed crown of the implant. Many aesthetic indices, such as the Crown Esthetic Index (ICAI), the Pink Esthetic Score (PES), and the White Esthetic Score (WES), have been developed to objective the aesthetic result, whereas, for patient-centred results, The Oral Health Impact Pro9ile (OHIP) was created (31). Potential irritant effects of different denture base styles on gingival tissues have been documented. There is an increasing trend to position implants directly after detachment, often paired with rapid provisionalization. Immediate implant survival was good, 97% after one year of follow-up, and equivalent to the previously reported survival rate (32). Those are significant findings, which highlight the benefit of immediate provisionalization since the survival rate of implants was not lower than that of delayed provisionalisation. Upon atraumatic tooth extraction, the initial planning of the osteotomy starts with a 2 mm circular drill with copious irrigation through the surgical guidance for optimum mesiodistal location (33). In order to prevent disruption to the buccal cortical layer,

the drill tip will be located along the palatal wall of the extraction socket, 3-5 mm coronal to the apical end of the extraction socket. Cement-retained restorations are the most popular method of reconstruction of implants (34). Numerous dental lubricants are used either briefly or indefinitely for the cementation of the restorations. It is not suggested that no one cement is better than the other in the retention of cement-retained crowns (CRC) for the implantation of abutments (35). Zinc phosphate and zinc polycarboxylate are the two types of cement widely used in implant restorations. In the past two years, tests have found that immediate implants are equal, if not equivalent, to deferred insertion in terms of longevity, bone integrity, papillary aesthetics, and patient satisfaction (36). This trend is possibly the product of changing social conditions, increasingly challenging patients, and a need for fast outcomes, among other causes.

The abutment screw was a growing surgical mishap impacting the long-term effectiveness of the implant (37). Immediate implant placement as such a flexible technique has a strong success rate where thorough patient preparation and clinical preparations are carried out (38).

CONCLUSION :

Prediction of post extraction buccal bone loss during the treatment planning phase is essential for immediate implant cases. It is important to use an individualized approach to diagnosis and treatment planning, including a prediction of the extent of buccal bone loss following extraction. This approach may support additional indications for immediate implant placement — and with less trauma, shorter treatment and increased patient satisfaction. Within the limits of the study, 25 immediate implants were placed and the second quadrant was the most common site of the immediate implant placement..

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